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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,062	06/29/2005	Denise Marian Bakker	4662-34	6108
23117	7590	02/26/2008		
NIXON & VANDERHYE, PC			EXAMINER	
901 NORTH GLEBE ROAD, 11TH FLOOR			NDUBIZI, CHUKA CLEMENT	
ARLINGTON, VA 22203				
		ART UNIT	PAPER NUMBER	
		3749		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,062

**Applicant(s)**

BAKKER ET AL.

**Examiner**

CHUKA C. NDUBIZU

**Art Unit**

3749

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on through October 15 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 101507.072105
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 depends on claim 1 which recites only two heat exchange steps. However, claim 6 recites “.. a fourth heat exchange step ..”. For the purposes of examination the Examiner assumes claim 6 to recite “.. a third heat exchange step ..”.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee 5,384,404. Lee teaches the invention as claimed (see figure), an apparatus for supplying process heat in a process for the production of melamine, comprising a salt furnace 18 which includes a heat exchange unit 30 in which salt is heated, characterized in that the apparatus includes at least one further heat exchange unit 22 which directly or indirectly heats a process stream 12. With regard to claim 10 having

met the structural limitations as discussed above, the limitation of providing at least one heat exchange unit is inherently met.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1, 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark 4,784,069 in view of Hardeveid 4,408,046. Stark teaches a process of extracting heat from chemical process furnace flue gases (see fig 1, 2), which is the same problem the current application is addressing. Stark teaches the invention as claimed, process for the extraction of energy from flue gases of furnace 1 which is operated with a fuel, the process comprising a first heat exchange step in which the flue gases are heat exchanged with a first process stream at 5 (column 3 line 22-23), a

second heat exchange step wherein the flue gases exchange heat with a second stream (at 11), a third heat exchange step wherein the flue gases exchange heat with a third stream (at 13). The stream at 13 is supplied at a higher temperature than the flue gases since the stream at 13 are fresh hot combustion gases and the flue gases have already lost heat at 5 and 11.

However, Stark does not teach that the furnace is a salt furnace and in the first heat exchange step the flue gases exchange heat with molten salt.

Hardeveid teaches a process for making melamine comprising a first heat exchange step where the flue gases exchange heat with molten salt.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark's unit by exchanging heat with molten salt in the first step in order to produce molten salt for other applications.

In claim 1 the recitation "which is used in the process for the production of melamine" is given little patentable weight because this recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process, the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. In this application the invention is the process of extracting energy from flue gases as stated in the first line of claim 1, the title of the invention and the statement of the objectives and not the process of producing of melamine. See *In re Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) MPEP 2111.02 ii.

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4. Claims 2, 4, 5, 8, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Hardeveid and further in view of Wood et al 6,599,119. Stark in view of Hardeveid teaches the invention as claimed and as discussed above.

However, Stark in view of Hardeveid does not teach the second exchange step wherein the flue gases exchange heat with ammonia or urea and a third exchange step wherein the flue gases exchange heat with fresh air.

Wood teaches a process of extracting energy from flue gases (figs 1-4), wherein the flue gases are extracted and used to heat the incoming combustion air (fig 2 column 4 line 22-24); and wherein the flue gases exchange heat at the heat exchange unit 120 (fig 4) with ammonia 121.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark in view of Hardeveid's process by including the extraction of heat from the flue gases by using flue gases to heat the incoming fresh air or heat ammonia in order to improve energy efficiency as well as reduce pollution.

5. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Hardeveid and further in view of Westfall 2,943,088.

Stark in view of Hardeveid teaches the invention as claimed except for the flue gases exchanging heat with urea in the second heat exchange step.

Westfall discloses a processing plant wherein urea is heated in a kiln (heat exchanger) by flue gases (from flames) (column 3 line 58-63 and column 4 line 60-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark in view of Hardeveid's process by including the extraction of heat from the flue gases by using flue gases to heat urea in order to optimize energy use in the plant.

### ***Conclusion***

The prior art made of record in the attached USPTO 892 and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUKA C. NDUBIZU whose telephone number is (571)272-6531. The examiner can normally be reached on Monday - Friday 8.30 - 4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Chuka C Ndubizu/

Examiner, Art Unit 3749

20080214

/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749